# The Light Drum:
# Adaptive Technologies for Robotic Rehabilitation

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## Abstract

**The purpose of this research is to develop various types of interfaces that will support real-time music making for people with physical limitations. Technologies employed include: light sensors, motion sensors, and programmable devices.**

**Figure 1: Light source attached to head.**

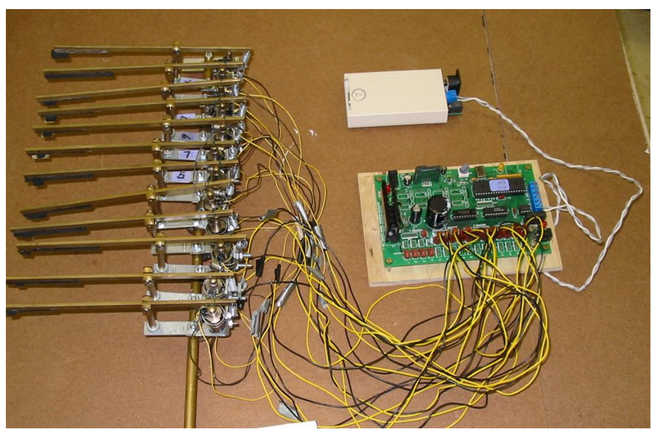

**Figure 2: Direct drive 4-channel comparator circuit with actuators.**

**Figure 3: Photo sensor housed inside target.**


**Figure 4: Multiple targets for use with toy piano.**

**Figure 5: Quadriplegic using flashlight clipped to baseball cap to play toy piano.**

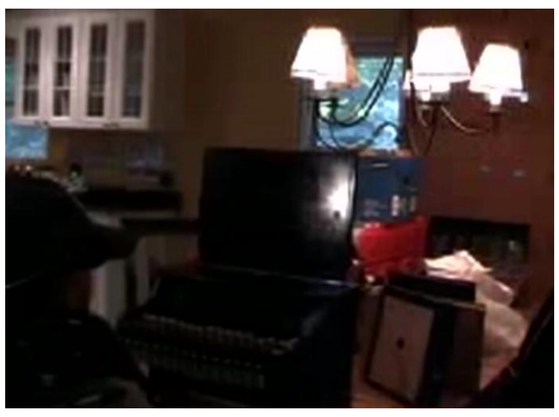

**Figure 6: Light strikes target and actuator hits piano key at precise moment to produce music.**

**Figure 7: Motion sensor – controlled percussion ensemble.**

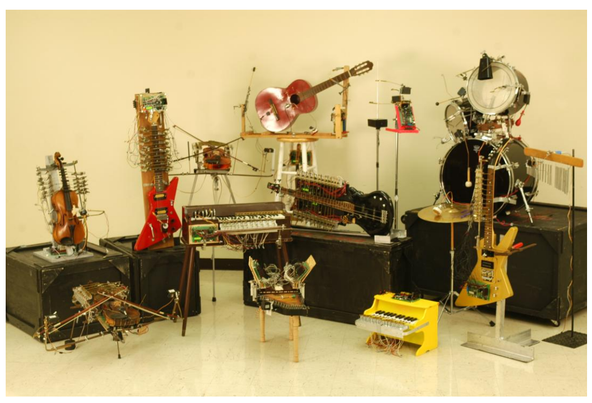

**Figure 8: Array of mechanical musical instruments.**

**Figure 9: New vista of arts and entertainment.**